PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PU040064	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/US2004/007270	International filing date *(day/month/year)* 09.03.2004	Priority date *(day/month/year)* 11.03.2003
International Patent Classification (IPC) or national classification and IPC H04N7/10, H04N7/20, H04H1/00, H04N7/24		
Applicant THOMSON LICENSING S.A. et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 4 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the opinion
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
27.10.2004	31.05.2005
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer McGrath, S Telephone No. +49 89 2399-8961

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US2004/007270

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages	
1-18	as originally filed
Claims, Numbers	
1-21	received on 29.10.2004 with letter of 27.10.2004
Drawings, Sheets	
1-7	as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-21
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-21
Industrial applicability (IA)	Yes:	Claims	1-21
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V.

1. The following documents cited in the International Search Report (ISR) are referred to in this report:

D1: WO 02/089479 A (DAVIES COLIN JOHN ; NDS LTD (GB); ROGERS PETER (GB); THEXTON NICHOLAS)
D2: ROSTAMI M ET AL: "Multi-decoder digital television platform" PROCEEDINGS 28TH EUROMICRO CONFERENCE, 4-6 SEPT. 2002, 4 September 2002 (2002-09-04), pages 170-175, XP010612143 DORTMUND, GERMANY
D3: WO 02/25847 A (ZYDONIK AARON E)
D4: US-A-6 084 638 (BLYTHE II BRENT W ET AL)
D5: EP-A-1 071 286 (SONY CORP)
D6: US-A-5 699 360 (TAKAHASHI HIROAKI ET AL)
D7: US 2002/056140 A1 (INOSE KENJI ET AL)

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

2.1 Document D1, see in particular Fig. 4, discloses (the references in parenthesis applying to this document):

processing means (140,120), comprising:
processing means (120,435,440) for receiving broadcast signals and processing said received signals to generate processed analog signals;
receiving means (page 26, lines 14-21) for receiving a request signal from a device (150,160) via a transmission medium (297,298) connecting said apparatus (140) and said device; and
wherein said processed analog signals are provided to a client device (150,160) via said transmission medium (297,298) responsive to said request signal.

2.2 D1 also discloses requests for desired processed analog signals by identifying a program - see Fig. 5 and Fig. 10.

2.3 D1 also discloses the use of unused bands on an existing cable in a home network - see page 27, lines 10-14.
It should also be noted that D1 also mentions the use of PC s to "place carriers on the cable in an unused band for data transfer".

2.4 D1 does not disclose the detection of such an unused or available frequency band.

2.5 Thus a problem arises in D1 concerning how to determine which bands are unused or "available".

2.6 D4 discloses the use of an existing cable network for placing carriers carrying data coming from a PC. Thus the skilled person aware of the passage in D1 on page 27, lines 10-14 will be aware of the need to find unused channels either for satellite signals or expressly for PC signals. Given the known use of PC signals in an existing cable network in D1 the skilled person is drawn to use the PC and cable network solution disclosed in D4 and which thus solves the above-mentioned problem.
In particular D4 discloses control means for detecting available frequency bands on coaxial cable and achieves the sharing of the coaxial cable for processed signals (from PC) and cable broadcast signals - see Figs. 1b, 1c, 2, col. 6, col. 8 and col. 10 - col. 12, line 16.

2.7 The applicants have argued that D1 does not disclose transmitting signals on a different network from the original network since in the alleged invention the desired processed analog signal is sent on a different network. In D1 the re-modulated signals use the "same network".
However, claim 1 does not specify two separate networks.
The term "cable broadcast signals" also covers the scenario whereby re-modulated signals are added to a coaxial cable. Any broadcast signal on a coaxial cable can be considered as "cable broadcast signals". Cf many CATV systems which receive their tv signals via satellite.

Thus this argumentation is not considered to be convincing.

3. The same lack of inventive step objection also applies to independent claims 10 and 17.

4. A lack of inventive step objection also arises for claims 1,10 & 17 in the light of the disclosure of D2 - see in particular Figs. 2-4, 6 and the corresponding text passages. See also page 173, RH col., lines 25-29, and page 174 LH col., lines 8-24. Whilst D2 does not explicitly disclose any control means for detecting an available frequency, D2 does indicate on page 173, RH col., lines 25-29 that the user is presented with a list of available channels. Thus a some form of semi-automatic control means are provided. If a fully automatic system were required for added convenience the skilled person would look to D4 which provides explicit detection of available channels.

5. Dependent claims 2-9, 11-16, 18-21 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step (Article 33(3) PCT).

   See D1-D7.
   For claims 8 & 16 - see also D5, Fig. 11, and D6, Figs. 5 & 6 which disclose encoding means, D/A converters and modulating means.

CLAIMS:

1. An apparatus (20), comprising:

processing means (21, 24, 25, 26) for receiving broadcast signals and processing said received signals to generate processed analog signals;

receiving means (27) for receiving a request signal from a device (30) via a transmission medium connecting said apparatus (20) and said device (30), wherein said processed analog signals are provided to said device (30) via said transmission medium responsive to said request signal, further wherein said request signal specifies a desired processed analog signal by identifying a program; and

control means (27) for detecting an available frequency band on said transmission medium, wherein said available frequency band is used to provide said processed analog signals to said device (30), thereby causing said transmission medium to be shared between said processed analog signals and cable broadcast signals distributed over said transmission medium.

2. The apparatus (20) of claim 1, wherein said transmission medium includes RG-59 cable.

3. The apparatus (20) of claim 1, wherein said broadcast signals are transmitted from a satellite source.

4. The apparatus (20) of claim 1, wherein said broadcast signals are transmitted from a digital terrestrial source.

5. The apparatus (20) of claim 1, wherein said control means (27) scans a plurality of frequency bands on said transmission medium to detect said available frequency band.

6. The apparatus (20) of claim 1, wherein said control means (27) detects said available frequency band based on a user input which selects said available frequency band.

7. The apparatus (20) of claim 1, wherein said processing means (21, 24, 25, 26) comprises front-end processing means (21) for extracting a desired digital transport stream from said received signals responsive to said request signal.

8. The apparatus (20) of claim 8, wherein said processing means (21, 24, 25, 26) further comprises:

encoding means (24) for encoding said desired digital transport stream with error correction data to generate encoded digital signals;

digital-to-analog converting means (25) for converting said encoded digital signals to analog baseband signals; and

modulating means (26) for modulating said analog baseband signals to generate said processed analog signals.

9. The apparatus (20) of claim 1, wherein said receiving means (27) comprises demodulating means (27) for demodulating said request signal.

10. A method (600) for distributing signals from a gateway apparatus to a client device, comprising steps of:

receiving broadcast signals (610);

receiving a request signal from said client device via a transmission medium connecting said gateway apparatus and said client device (620);

processing said received signals to generate processed analog signals (650);

detecting an available frequency band on said transmission medium, wherein said available frequency band is used to provide said processed analog signals to said client device (30); and

providing said processed analog signals to said client device via said transmission medium responsive to said request signal (660), thereby causing said transmission medium to be shared between said processed analog signals and cable broadcast signals distributed over said transmission medium, wherein said request signal specifies a desired processed analog signal by identifying a program.

11. The method (600) of claim 10, wherein said transmission medium includes RG-59 cable.

12. The method (600) of claim 10, wherein said broadcast signals are transmitted from a satellite source.

13. The method (600) of claim 10, wherein said broadcast signals are transmitted from a digital terrestrial source.

14. The method (600) of claim 10, wherein said detecting step (640) includes scanning a plurality of frequency bands on said transmission medium to identify said available frequency band.

15. The method (600) of claim 10, wherein said detecting step (640) is performed based on a user input which selects said available frequency band.

16. The method (600) of claim 10, further comprising steps of:

extracting a desired digital transport stream from said received signals responsive to said request signal (630);

encoding said desired digital transport stream with error correction data to generate encoded digital signals (652);

converting said encoded digital signals to analog baseband signals (654); and

modulating said analog baseband signals to generate said processed analog signals (656).

17. A client device (30), comprising:

a front-end processor (31) operative to process analog signals provided from an apparatus (20) via a transmission medium connecting said apparatus (20) and said client device (30);

a back channel processor (32) operative to generate a request signal responsive to a user input, wherein said request signal is provided to said apparatus (20) via said transmission medium and causes said apparatus (20) to provide said processed analog signals to said client device (30), further wherein said request signal specifies a desired processed analog signal by identifying a program; and

control means (27) for detecting an available frequency band on said transmission medium, wherein said available frequency band is used to provide said processed analog signals to said device (30), thereby causing said transmission medium to be shared between said processed analog signals and cable broadcast signals distributed over said transmission medium.

18. The client device (30) of claim 17, wherein said transmission medium includes RG-59 cable.

19. The client device (30) of claim 17, wherein:

said front-end processor (31) processes said analog signals to generate a digital transport stream, and further comprising:

an A/V processor (34) operative to process said digital transport stream to generate output signals.

20. The client device (30) of claim 19, wherein said back channel processor (32) scans a plurality of frequency bands on said transmission medium to detect said available frequency band.

21. The client device (30) of claim 19, wherein said back channel processor (32) detects said available frequency band based on a user input which selects said available frequency band.